

**REMARKS**

**Status Of Application**

Claims 1-46 are pending in the application; the status of the claims is as follows:

Claims 1, 2, 5, 6, 8-18, 20, 23, 24, 26, 28-32, and 34 are rejected under 35 U.S.C. § 103(a) as being unpatentable over "Cholesteric LCDs show images after power is turned off" to Powell ("Powell") in view of U.S. Patent No. 4,802,739 to Iwamoto ("Iwamoto") and U.S. Patent No. 5,463,408 to Mio ("Mio").

Claims 3, 4, 7, 21, and 22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Powell in view of U.S. Patent No. 6,115,033 to Choi ("Choi").

Claims 19, 27, 35, 37, 38, 40, 41, 43, 44, and 46 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Powell in view of Mio.

Claim 25 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Powell in view of Mio and U.S. Patent No. 5,912,653 to Fitch ("Fitch").

Claim 33 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Powell in view of Iwamoto and Mio as applied to claims 1, 2, 5, 6, 8-18, 20, 23, 24, 26, 28-32, and 34 above, and further in view of Fitch.

Claims 36, 39, 42, and 45 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Powell in view of Mio as applied to claims 19, 27, 35, 37, 38, 40, 41, 43, 44, and 46 above, and further in view of Iwamoto.

**Drawings**

To date, no Notice of Draftsperson's Patent Drawing Review has been received.

Applicants respectfully request receipt of this document when it becomes available.

Please note that the original drawings filed in the patent application are "formal" drawings.

**Claim Amendments**

Claim 25 has been amended to clarify the language therein in a manner that does not affect the scope of the substance of the claims. These changes do not introduce any new matter.

**35 U.S.C. § 103(a) Rejections**

The rejection of claims 1, 2, 5, 6, 8-18, 20, 23, 24, 26, 28-32, and 34 under 35 U.S.C. § 103(a), as being unpatentable over Powell in view of Iwamoto and Mio, is respectfully traversed based on the following.

Claim 1 of the present application is directed to a liquid crystal display device comprising:

- a liquid crystal display which uses reflective type liquid crystal with a memory effect;
- a driving circuit which performs image writing on the liquid crystal display;
- a power supply circuit which supplies electric power to the driving circuit, the power supply circuit including one element selected from the group consisting of a booster circuit and a DC/DC converter; and
- a controller which inactivates at least part of the power supply circuit after completion of the image writing.

That is, claim 1 is a liquid crystal display device (LCD) comprising a reflective type liquid crystal with a memory effect (e.g., a cholesteric liquid crystal) which maintains displayed content even after power is discontinued to the display device. Claim 1 requires that the power supply circuit include either a booster circuit or a DC/DC converter. The purpose of the booster circuit or the DC/DC converter is to quickly provide power sufficient to write to the LCD. Claim 1 also requires a controller which inactivates at least part of the power supply circuit after completion of the image writing. By inactivating at least part of the power supply following writing on the liquid crystal with memory effect, energy savings can be realized while displayed content is maintained.

Powell discloses a liquid crystal display for displaying an image. The display is formed of a cholesteric bistable liquid crystal with a memory effect. Powell further discloses that the cholesteric bistable liquid crystal with a memory effect displays the image when power to the display is turned off. The cholesteric display device of Powell is adapted to save energy by consuming power only when the display is being redrawn, not requiring power when the display is static, and by not requiring an integrated light source. Powell does not disclose or suggest a power supply circuit which includes one element selected from the group consisting of a booster circuit and a DC/DC converter. Further, Powell does not disclose or suggest any benefit of doing so.

Iwamoto discloses a liquid crystal control device for supplying a voltage to drive a liquid crystal display device. The control device of Iwamoto contains a booster circuit connected between a plurality of switches. The construction of the device of Iwamoto makes it possible to quickly erase content that has been displayed, without displaying content which is different from what has been displayed on the LCD control device. (*Iwamoto* col. 7, lines 17-21.) Thus, **at the time of disconnection of the power supply**, in the construction disclosed in Iwamoto the displayed content is quickly erased or removed from the display without displaying a content which is different from what has been displayed on the liquid display panel. (*Iwamoto*, col. 7, line 66 – col. 8, line 3.) Iwamoto does not disclose its use with cholesteric liquid crystal devices which have a memory effect and are adapted to **maintain** the displayed content even after power is discontinued. One skilled in the art would appreciate that the quick erase feature of Iwamoto is at cross-purposes with providing a liquid crystal with memory effect which retains content displayed on the display even when the power is shut off. Thus, substituting a liquid crystal with memory effect into Iwamoto would effectively defeat the purpose of Iwamoto.

Because the purpose and operation of Iwamoto is to quickly **erase** displayed content when power is turned off (i.e., not to preserve displayed content when power is turned off), one skilled in the art reading Iwamoto would find liquid crystal materials which have a memory effect to be unsuitable for a quick erase feature. That is, the device

of Iwamoto would not be suited for use with devices utilizing cholesteric liquid crystal materials or any liquid crystals which have a memory effect. Thus, one skilled in the art would find nothing advantageous about combining the quick erase controller of Iwamoto which would not be suited for use with cholesteric liquid crystals with memory effect with a power saving cholesteric liquid crystal display device of Powell, which uses a cholesteric liquid crystal with memory effect to maintain a display even when the power is turned off.

Claim 1 includes the limitations that a "driving circuit" that "performs image writing" with a "power supply circuit" including a booster or DC/DC converter. Iwamoto only shows a boosted signal for erasing. Even when combined, none of the cited references show or suggest a driving circuit for image writing supplied by a supply including a booster or DC/DC converter. To support a *prima facie* case for obviousness, the combined references must show or suggest every limitation of the claim. MPEP § 2143. Therefore, the cited references do not support a *prima facie* case for obviousness and claim 1 is non-obvious over the cited references.

To overcome the obvious inadequacies of Powell and Iwamoto, the Examiner has cited Mio in combination therewith as disclosing turning power off in a liquid crystal display device using a controller unit and timer.

Mio discloses a liquid crystal display device which incorporates a timing signal generation circuit which turns on switches 10-12 when interval control signal P from the liquid crystal power supply circuit is in active status, and which turns switches 10-12 off when interval control signal P is in inactive status. When the switches are turned on, content can be displayed on the liquid crystal display. When the switches are turned off, content is no longer displayed on the liquid crystal display, although condensers 14, 15 (a.k.a. capacitors) are used to maintain supply voltage to driver 2 when the interval control signal P is inactive. The purpose of Mio is to provide a liquid crystal display in which current does not flow from the power supply to ground (GND) when there is no display. (*Mio*, col. 2, line 48-52.) In this way, power consumption of the liquid crystal display can

be reduced. That is, the device of Mio only switches off when the LCD is not displaying thus conserving power. (*Mio*, col. 3, lines 31-43.) By turning switches 10-12 off when not displaying, current flow from power supply 3 to ground (GND) is cut and power consumption is reduced.

According to Mio, when the power supply is switched off, (i.e., when the liquid crystal display is not displaying content), condensers (a.k.a. capacitors) 14, 15 hold and maintain supply voltages ( $V_{L1}$ - $V_{L3}$ ) to the liquid crystal driver 2 from the liquid crystal power supply generation circuit 30. The purpose of condensers 14, 15 is to store voltage which can later be used to initially drive writing when the power is shut off and before it can be brought back on. When no write is requested, i.e., no content is being displayed on the liquid crystal display panel, drain on drivers ( $V_{L1}$ - $V_{L3}$ ) is negligible and voltage stored in condensers 14, 15 is maintained. However, when a write is initiated, stored voltage within condensers 14, 15 is supplied to drivers  $V_{L1}$ - $V_{L3}$ . This stored voltage provides sufficient voltage to allow the drivers to initially drive writing on the liquid crystal display panel 1 until power ( $V_L$ ) at power supply 3 is restored and flowing thereto. This prevents lag time between write initiation and power being supplied to the drivers to perform writing.

In contrast to the disclosure of Mio, claim 1 recites a liquid crystal display which uses reflective type liquid crystal with a memory effect. Mio teaches that the display is activated when displaying or writing content on the display and **does not** display content or maintain displayed content when inactivated. Thus, one of ordinary skill in the art can read and understand Mio to teach the use of liquid crystal materials which **do not** have memory effect. That is, Mio teaches that content is maintained on the display only while power is maintained to the display, and that when the power is removed, displayed content is no longer displayed on the display. The disclosed purpose of Mio is to conserve power **when not** displaying content instead of to conserve power **while** displaying content, as is the purpose of the device of claim 1 of the present invention. It is apparent that Mio did not contemplate using a liquid crystal with memory effect. The purpose of using a reflective type liquid crystal with memory effect such as claimed in claim 1 is to maintain

content on a display even when the power is turned off, thus conserving energy while **maintaining** a displayed content. Thus, because Mio shuts down the display when not displaying, one of ordinary skill in the art would not be motivated to substitute a liquid crystal with memory effect into Mio. Therefore, Mio is not applicable art, and claim 1 cannot be cited to render claim 1 obvious.

Because neither Iwamoto nor Mio disclose or suggest the use of reflective type liquid crystal materials with memory effect which maintains content on a display even when power is removed, one skilled in the art would not be motivated to combine the art of Iwamoto and Mio with that of the reflective type liquid crystal display device with memory effect of Powell. Further, even if motivation to combine were found, the combination of Powell, Iwamoto, and Mio would not provide the device claimed in claim 1 of the present application. Therefore, claim 1 is not rendered obvious by Powell, Iwamoto, or Mio, either singly or in combination. Claims 2, 5, 6, and 8-14 depend from non-obvious independent claim 1, and thus incorporate the limitations of claim 1 therein. Therefore, claims 2, 5, 6, and 8-14 are not rendered obvious by Powell, Iwamoto, or Mio, either singly or in combination.

Like claim 1, independent claims 15, 16, 20 and 28 each require a power supply circuit consisting of one of a booster circuit and a DC/DC converter; and a controller which inactivates at least part of the power supply circuit after completion of the image writing. Further, claims 15, 16, 20, and 28 each require that the liquid crystal display use reflective type liquid crystal with a memory effect. Thus, for at least the reasons presented above with respect to claim 1, claims 15, 16, 20 and 28 are also not rendered obvious by Powell, Iwamoto, or Mio, either singly or in combination.

Claims 23, 24, 26 and 33 depend from non-obvious independent claim 15, and thus incorporate the limitations of claim 15 therein. Therefore, claims 23, 24, and 26 are not rendered obvious by Powell, Iwamoto, or Mio, either singly or in combination.

Claims 17, 18 and 32 depend from non-obvious independent claim 16, and thus incorporate the limitations of claim 16 therein. Therefore, claims 17, 18 and 32 are not rendered obvious by Powell, Iwamoto, or Mio, either singly or in combination.

Claims 29 and 30 depend from non-obvious independent claim 28, and thus incorporate the limitations of claim 28 therein. Therefore, claims 29 and 30 are not rendered obvious by Powell, Iwamoto, or Mio, either singly or in combination.

Accordingly, it is respectfully requested that the rejection of claims 1, 2, 5, 6, 8-18, 20, 23, 24, 26, 28-32, and 34 under 35 U.S.C. § 103(a) as being unpatentable over Powell in view of Iwamoto and Mio, be reconsidered and withdrawn.

The rejection of claims 3, 4, 7, 21, and 22 under 35 U.S.C. § 103(a), as being unpatentable over Powell in view of Choi, is respectfully traversed based on the following.

Claim 3 recites a liquid crystal display device comprising in part: a data processing unit which is connected to the driving circuit, the data processing unit incorporating at least one central processing unit; and a controller which inactivates at least part of an internal circuit of the at least one central processing unit after completion of the image writing.

As discussed previously, Powell discloses a liquid crystal display which does not consume electric power to keep displaying an image thereon after power is turned off. Powell does not disclose or suggest a specific method for turning the power off in the display device. Thus, it is clear that Powell does not disclose or suggest a controller which inactivates part of an internal circuit of the at least one central processing unit after completion of the image writing.

Choi is cited in combination with Powell to overcome the obvious limitations of Powell cited above. Choi is directed to a technique to reduce the power consumption of a

display which consumes electric power to keep displaying an image thereon (for example, a CRT) by use of a display power management system (DPMS). According to Choi:

In order to save power in display monitor 200, microcomputer 220 enters the DPMS mode according to the presence or absence of the horizontal and vertical sync signals, H-SYNC and V-SYNC, generated from video card 120. As for the DPMS mode, microcomputer 220 enters the standby mode to interrupt the RGB picture signals when the horizontal sync signal H-SYNC is off and the vertical sync signal V-SYNC is on, while it enters the suspend mode to interrupt the deflection voltage when the vertical sync signal V-SYNC off and the horizontal sync signal H-SYNC is on.

When both of the horizontal and vertical sync signals, H-SYNC and V-SYNC are interrupted, microcomputer 220 executes the DPMS off mode to interrupt a secondary power of switching transformer 254 via PWM IC 256, thereby saving power in display monitor 200. When the user presses a soft power key (not shown), the same effect can be attained as in the DPMS off mode wherein the secondary power of switching transformer 254 is interrupted through PWM IC 256. (*Choi*, col. 6, lines 11-29.)

Thus, according to Choi, the microcomputer enters power saving standby and suspend modes based on the horizontal and/or vertical sync signals or when a user presses a soft power key, which are all external signals. These external signals are not provided as a result of completion of image writing as is recited in claim 3. This is not the same as using a controller (which is an internal signal) to inactivate at least part of an internal circuit of the at least one central processing unit after completion of the image writing. Thus, Choi teaches a different technique than Powell, and does not disclose or suggest using a controller to inactivate at least part of an internal circuit of the at least one central processing unit after completion of the image writing.

As neither Powell nor Choi disclose or suggest a controller to inactivate at least part of an internal circuit of the at least one central processing unit after completion of the image writing, claim 3 is not rendered obvious by Powell or Choi, either singly or in combination. Because claims 4, 7, 21 and 22 depend either directly or indirectly from non-obvious independent claim 3 and thus incorporate all the limitations of claim 3



therein, they too are not rendered obvious by Powell or Choi, either singly or in combination.

Accordingly, it is respectfully requested that the rejection of claims 3, 4, 7, 21, and 22 under 35 U.S.C. § 103(a) as being unpatentable over Powell in view of Choi, be reconsidered and withdrawn.

The rejection of claims 19, 27, 35, 37, 38, 40, 41, 43, 44, and 46 under 35 U.S.C. § 103(a), as being unpatentable over Powell in view of Mio, is respectfully traversed based on the following.

Claim 19 recites a portable electronic device comprising in part: a liquid crystal display which uses reflective type liquid crystal with a memory effect; and a controller which inactivates at least part of the power supply circuit after completion of the image writing, wherein the controller also inactivates at least part of an internal circuit of a data processing unit after completion of the image writing. Further, claim 19 requires a casing which encases the liquid crystal display, the driving circuit, the power supply circuit and the controller.

Powell does not disclose or suggest a controller which inactivates at least part of the power supply circuit after completion of the image writing. Further, Powell neither discloses nor suggests that the controller also inactivate at least part of an internal circuit of a data processing unit after completion of the image writing. Additionally, Powell fails to disclose or suggest that the liquid crystal display, the driving circuit, the power supply circuit and the controller be encased in a casing.

In order to overcome the inadequacies of Powell, Mio is cited in combination with Powell. Mio is alleged to disclose that the controller inactivates internal circuits when the power supply circuit is inactivated. However, as discussed previously, Mio does not disclose or suggest using a reflective type liquid crystal with memory effect. Further, Mio does not disclose or suggest a controller which inactivates at least part of an internal

circuit of a data processing unit after completion of the image writing, as is recited in claim 19. Therefore, for at least the reason that neither Powell nor Mio disclose or suggest a controller which inactivates at least part of an internal circuit of a data processing unit after completion of the image writing, as is recited in claim 19, claim 19 is not rendered obvious by Powell or Mio, either singly or in combination.

Further, neither Powell nor Mio disclose nor suggest that the liquid crystal display, the driving circuit, the power supply circuit and the controller be encased in a casing. Therefore, for at least the reason that neither Powell nor Mio disclose or suggest that the liquid crystal display, the driving circuit, the power supply circuit and the controller be encased in a casing, as is recited in claim 19, claim 19 is not rendered obvious by Powell or Mio, either singly or in combination.

Claim 27 recites a controller which inactivates at least part of the power supply circuit after completion of the image writing, and a casing which encases the liquid crystal display, the driving circuit, the power supply circuit and the controller. Further, claim 27 recites using a reflective type liquid crystal with a memory effect wherein the reflective type liquid crystal display includes a plurality of display areas.

Powell does not disclose or suggest a controller which inactivates at least part of the power supply circuit after completion of the image writing. As discussed above, Mio cannot be read to disclose or suggest a memory type liquid crystal and is thus not applicable art which can be used to render claim 27 obvious. Further, neither Powell nor Mio disclose or suggest a casing which encases the liquid crystal display, the driving circuit, the power supply circuit and the controller. Thus, for at least the reasons provided above, claim 27 is also not rendered obvious by Powell or Mio, either singly or in combination.

Claim 35 recites a display which uses a reflective type liquid crystal with a memory effect; a controller which inactivates a least part of the power supply circuit after

completion of the image writing and reactivates the inactivated part of the power supply upon receiving another write command.

Powell does not disclose or suggest a controller which inactivates at least part of the power supply circuit after completion of the image writing. Further, Powell does not disclose or suggest reactivating the inactivated part of the power supply upon receiving another write command.

In Mio, the interval control signal P (which controls switches 10, 11, and 12) is generated from frame frequency signal FL, not in response to a write command. Reactivation of the inactivated part of the power supply is accomplished based on the interval control signal P and not upon receiving another write command.

Thus, for at least the reasons provided above, claim 35 is not rendered obvious by Powell or Mio, either singly or in combination.

Claim 37 depends directly from independent claim 35, which is not rendered obvious by Powell or Mio, either singly or in combination. Claim 37 further recites that the controller inactivates at least a part of the power supply circuit substantially immediately after completion of the image writing. Powell does not disclose the controller inactivates at least a part of the power supply circuit substantially immediately after completion of the image writing. Mio does not disclose or suggest the controller inactivates at least a part of the power supply circuit substantially immediately after completion of the image writing. Instead, Mio relies on timing commands or interval signals to determine whether switches are to be opened or closed. Thus, claim 37 is not rendered obvious by Powell or Mio, either singly or in combination.

Claims 38, 41, and 44 each recite a display or method which uses a reflective type liquid crystal with a memory effect; a controller which inactivates at least part of the power supply circuit after completion of the image writing and reactivates the inactivated part of the power supply upon receiving another write command. Thus, for at least the

reasons presented above with respect to claim 35, these claims are not rendered obvious by Powell or Mio, either singly or in combination.

Claims 40, 43 and 46 depend from claims 38, 41, and 44 respectively which are not rendered obvious by Powell or Mio, either singly or in combination. Claims 40, 43, and 46 further recite that the controller inactivates at least a part of the power supply circuit substantially immediately after completion of the image writing. Thus, for at least the reasons presented above with respect to claim 37, claims 40, 43 and 46 are also not rendered obvious by Powell or Mio, either singly or in combination.

Accordingly, it is respectfully requested that the rejection of claims 19, 27, 35, 37, 38, 40, 41, 43, 44, and 46 under 35 U.S.C. § 103(a) as being unpatentable over Powell in view of Mio, be reconsidered and withdrawn.

The rejection of claim 25 under 35 U.S.C. § 103(a), as being unpatentable over Powell in view of Mio and Fitch, is respectfully traversed based on the following.

Claim 25 recites a liquid crystal display device comprising in part:

- a liquid crystal display which uses reflective type liquid crystal with a memory effect;
- a driving circuit which performs image writing on the liquid crystal display;
- a power supply circuit which supplies electric power to the driving circuit;
- a controller which inactivates at least part of the power supply circuit after completion of the image writing, and reactivates the inactivated part of the power supply upon receiving another write command; and
- a casing which encases the liquid crystal display, the driving circuit, the power supply circuit and the controller,

wherein the liquid crystal display includes a pair of substrates accommodating the reflective type liquid crystal therebetween, and wherein at least one of the substrates is flexible.

As discussed above, Powell does not disclose or suggest a controller which inactivates at least part of the power supply circuit after completion of the image writing.

Further, Powell does not disclose or suggest reactivating the inactivated part of the power supply upon receiving another write command. Additionally, Powell does not disclose or suggest that the liquid crystal display includes a pair of substrates wherein at least one of the substrates is flexible. Also, Powell does not disclose or suggest a casing which encases the liquid crystal display, the driving circuit, the power supply circuit and the controller.

In Mio, the interval control signal P (which controls switches 10, 11, and 12) is generated from frame frequency signal FL, not in response to a write command. Reactivation of the inactivated part of the power supply is accomplished based on the interval control signal P and not upon receiving another write command.

In order to overcome the obvious inadequacies of Powell and Mio, Fitch is cited as disclosing the use of a flexible substrate. However, Fitch fails to disclose or suggest a controller which inactivates at least part of the power supply circuit after completion of the image writing. As Mio is not relevant art for the purpose of rendering claim 25 obvious, Powell in combination with Fitch fails to render claim 25 obvious.

Accordingly, it is respectfully requested that the rejection of claim 25 under 35 U.S.C. § 103(a) as being unpatentable over Powell in view of Mio and Fitch, be reconsidered and withdrawn.

The rejection of claim 33 under 35 U.S.C. § 103(a), as being unpatentable over Powell in view of Iwamoto and Mio as applied to claims 1, 2, 5, 6, 8-18, 20, 23, 24, 26, 28-32, and 34 above, and further in view of Fitch, is respectfully traversed based on the following.

Claim 33 depends from independent claim 15. As discussed above, claim 15 is not rendered obvious by Powell, Iwamoto, or Mio, either singly or in combination. Further, as discussed above, whether or not Fitch discloses the limitation of claim 33, wherein at least one of the substrates is flexible, Fitch fails to overcome the obvious inadequacies of

Powell, Iwamoto, or Mio. Thus, claim 33 is not rendered obvious by Powell, Iwamoto, Mio, or Fitch, either singly or in combination.

Accordingly, it is respectfully requested that the rejection of claim 33 under 35 U.S.C. § 103(a) as being unpatentable over Powell in view of Iwamoto and Mio as applied to claims 1, 2, 5, 6, 8-18, 20, 23, 24, 26, 28-32, and 34 above, and further in view of Fitch, be reconsidered and withdrawn.

The rejection of claims 36, 39, 42, and 45 under 35 U.S.C. § 103(a), as being unpatentable over Powell view of Mio as applied to claims 19, 27, 35, 37, 38, 40, 41, 43, 44, and 46 above, and further in view of Iwamoto, is respectfully traversed based on the following.

Claims 36, 39, 42, and 45 depend from independent claims 35, 38, 41, and 44 respectively. For at least the reasons presented above with respect to claims 35, 38, 41, and 44, claims 36, 39, 42, and 45 are also not rendered obvious by Powell or Mio, either singly or in combination. As discussed above, Iwamoto does not disclose or suggest using a reflective type liquid crystal with memory effect. Thus, one skilled in the art would find nothing advantageous about combining the quick erase controller of Iwamoto with a power saving cholesteric liquid crystal display device of Powell, which maintains a display even when the power is turned off.

As neither Mio nor Iwamoto overcome the obvious inadequacies of Powell, claims 36, 39, 42, and 45 cannot be rendered obvious by Powell, Mio, or Iwamoto, either singly or in combination.

Accordingly, it is respectfully requested that the rejection of claims 36, 39, 42, and 45 under 35 U.S.C. § 103(a) as being unpatentable over Powell view of Mio as applied to claims 19, 27, 35, 37, 38, 40, 41, 43, 44, and 46 above, and further in view of Iwamoto, be reconsidered and withdrawn.

Application No. 09/522,958  
Response dated November 3, 2003  
Reply to Office Action of July 1, 2003

**CONCLUSION**

Wherefore, in view of the foregoing remarks, this application is considered to be in condition for allowance, and an early reconsideration and a Notice of Allowance are earnestly solicited.

Any fee required by this document other than the issue fee, and not submitted herewith should be charged to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260. Any refund should be credited to the same account.

If an extension of time is required to enable this document to be timely filed and there is no separate Petition for Extension of Time filed herewith, this document is to be construed as also constituting a Petition for Extension of Time Under 37 C.F.R. § 1.136(a) for a period of time sufficient to enable this document to be timely filed.

Any other fee required for such Petition for Extension of Time and any other fee required by this document pursuant to 37 C.F.R. §§ 1.16 and 1.17, other than the issue fee, and not submitted herewith should be charged to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260. Any refund should be credited to the same account.

Respectfully submitted,

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